

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
21 May 2004 (21.05.2004)

PCT

(10) International Publication Number
WO 2004/041196 A3

(51) International Patent Classification⁷: C12Q 1/68, (74) Agent: JEFFREY, I., Auerbach; Liniak, Berenato & C07H 21/04 White, LLC, 6550 Rock Spring Drive, Suit 240, Bethesda, MD 20817 (US).

(21) International Application Number:

PCT/US2003/034787

(22) International Filing Date:

3 November 2003 (03.11.2003)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/423,380 4 November 2002 (04.11.2002) US

(71) Applicants (for all designated States except US): THE UNITED STATES OF AMERICA, represented by THE SECRETARY OF HEALTH AND HUMAN SERVICES, NIH [US/US]; Office of Technology Transfer, Suite 325, 6011 Executive Boulevard, Rockville, MD 20852 (US). THE UNITED STATES OF AMERICA, as represented by THE SECRETARY OF DEFENSE [US/US]; Armed Forces Institute of Pathology, 6825 16th Street NW, Washington, DC 20306-6000 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): HARRIS, Curtis, C. [US/US]; P.O. Box 77, 4720 Waverly Avenue, Garrett Park, MD 20896-0077 (US). HE, Ping [US/US]; 7305 Bannockburn Ridge Ct, Bethesda, MD 20817 (US). VARTICOVSKI, Lyuba [US/US]; 6506 Cardigan Road, Bethesda, MD 20817 (US). TRAVIS, William, D. [US/US]; P.O. BOX 2821, Kensington, MD 20891 (US).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (regional): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:
3 February 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

WO 2004/041196 A3

(54) Title: METHODS AND COMPOSITIONS FOR THE DIAGNOSIS OF NEUROENDOCRINE LUNG CANCER

(57) Abstract: This invention relates to methods and compositions for the diagnosis of neuroendocrine lung cancers. In particular, the invention concerns the use of cDNA microarrays to facilitate the differential diagnosis of neuroendocrine tumor types.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/34787

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : C12Q 1/68; C07H 21/04
 US CL : 435/6 91.2; 536/23.1, 24.3

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 U.S. : 435/6 91.2; 536/23.1, 24.3

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
 STN:Medline Biosis Caplus, OMIM, PubMed

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	BANGUR et al. Identification of genes over-expressed in small cell lung carcinoma using suppression subtractive hybridization and cDNA microarray expression analysis. <i>Oncogene</i> . 2002, Vol. 21, pages 3814-3825, entire document.	1-3, 9-11, 20-21
Y		4-8, 12-19, 22-29
X	GUGGER et al. Quantitative expansion of structural genomic alterations in the spectrum of neuroendocrine lung carcinomas. <i>Journal of Pathology</i> . 2002, Vol. 196: pages 408-415, entire document.	1-3, 6-12, 15-27
Y		4, 5, 13, 14, 28, and 29
X	VIRTANEN et al. Integrated classification of lung tumors and cell lines by expression profiling. <i>Proc. Natl. Acad. Sci.</i> September 2002, Vol. 99, pages 12357-12362, entire document.	1-3, 6-12, 15-27
Y		13, 14, 28, and 29
Y	YAO et al. Human gamma-glutamyl hydrolase: CLoning and characterization of the enzyme expressed in vitro. <i>Proc. Natl. Acad. Sci., USA</i> . 17 September 1996, Vol. 93, pages 10134-10138, entire document.	4,5, 13, 14, 28, and 29

Further documents are listed in the continuation of Box C.

See patent family annex.

Special categories of cited documents:	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

12 November 2004 (12.11.2004)

Date of mailing of the international search report

DAVE BRUGER 01 DEC 2004
 Authorized Officer
 Sally Saktarlis

Telephone No. 571-272-0500

Name and mailing address of the ISA/US
 Mail Stop PCT, Attn: ISA/US
 Commissioner for Patents
 P.O. Box 1450
 Alexandria, Virginia 22313-1450
 Facsimile No. (703) 305-3230

INTERNATIONAL SEARCH REPORT

C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	SCHENA et al. Parallel human genome analysis: Microarray-based expression monitoring of 1000 genes. Proc. Natl. Acad. Sci., USA. October 1996, Vol. 93, pages 10614-10619, entire document..	13, 14, 28, and 29